Group 1 Recommendations

• Use guided inquiry to create a focused and safe environment for collaboration.

• The inquiry process

• starts with a targeted question around student learning.

• Iteratively gathers and collects evidence (possibly with a protocol) through activities such as FIGs, CATS, classroom exchanges and common assessments.

• Results in ongoing changing practice.

-- Our Wednesday meetings (FIGs) in 2010-2011 had an inquiry process. We delved into questions surrounding implementation of new curriculum. Toward the end of these meeting, we looked student work and common assessments.

-- As a department, we participated in many faculty exchanges. This last year, Pete, Deb and Terry participated in many faculty exchanges with an re-iterative process. This is seen in our annual

report.

Group 2 Recommendations

• Departmental investment in creating a curriculum which supports deeper student understanding: Faculty take control of curriculum either by re-examining course learning outcomes or using backwards design – this process is not dictated by textbook content or other external forces but by what we *really* want students to understand. Faculty must have a willingness to rethink or move away from the traditional curriculum. This process allows for deeper learning experiences in the classroom and a shift in the role of faculty from lecturer to facilitator. Students explaining their mathematical thinking becomes a powerful learning activity.

-- This last year, Deb and Terry used backwards design to re-examine the Algebra sequence. Bev used backwards design somewhat in re-examining her pre-algebra course. This is seen in the annual report.

• Proactive leadership in the (campus) community promoting math literacy: Math faculty should be actively engaged in shaping the campus cultural perception of mathematics. Specifically, faculty should advocate the fact that no one is born “bad at math” and lead a conversation that challenges the conventional wisdom regarding what math is and how it is learned.

-- Pete leads a "Math Success" Workshop once a quarter for all students to make affective changes in how they see themselves in math courses. Deb and Terry led a brown bag that reached campus wide on how their math classes approach math using nontraditional methods and the affects on student learning. Along with this, they presented at a Math Symposium in November 2011 to share the results of their backwards design and the affects on students learning with K-16 educators. Jim Brady gave a presentation to our districts executive board and board of trustees about student success given the change of our curriculum.

*• Provide interested instructors at all levels (adjuncts and FT) with time, space, and support to experiment (resulting in either success or failure) without fear of repercussion.*

*-- We did this in our Wednesday meetings, etc… See annual report.*

Group 3 Recommendations

1) Now we use Formative Assessments in the classroom to frequently gain information about student understanding and we use that information to decide what to do next as teachers. Formative Assessments include, but are not limited to: common cross-course and cross-section questions, group quizzes/tests, multiple drafts of complex tasks, CATS, self-assessment.

-- We gave a couple of common final questions on the Math 94 and Math 98 Final Exam. We have yet to follow through with examining these questions and results, but we would like to.

2) As the use of Formative Assessment moves from educators tinkering in isolation to a visible part of our collective practice there is a noticeable shift in the adaptive capacity of a department to help students be successful. The visibility comes through participation in structured FIGS, formal lesson study, departmental initiatives using evidence-based practices, and state-wide retreats.

-- We continue to collect data and use it to inform our decisions. Also, the results of Micky's survey will be used to inform our practices in our developmental curriculum.

Group 4 Recommendations

1) Effective tasks were open ended, not listed with a,b,c,d to lead to the answer. Just ask the question and allow students to struggle in the practice of real problem solving. These require training, experimentation, reflection and support to create.

2) A skilled facilitator is clear on their goals/outcomes beyond math skills, sets expectations for process and frustration in class, engages each student, guides the inquiry but does not give answers, and encourages productive struggle. Requires training, experimentation, reflection, and support.

-- Some faculty participated in Ruth Parker's workshop. This led to us to being more skilled facilitators.

3) To promote contextualized tasks, adjust course outcomes and assessments to encompass the demands of contextualized tasks and real life applications. These outcomes can't just be math procedures, but rather the thinking skills to employ the math skills that they've learned in the real world.

-- Deb and Terry once again. Refer to annual report.

Group 5 Recommendations

• Reallocate classroom time to make space to shift faculty role to coach from answer-machine, encourage multiple representations and strategies, and develop students’ abilities to articulate math.

-- Deb, Terry and Bev in the use of manipulatives and multiple representations. They re-evaluated classroom outcomes to create time for classroom experiences that used the multiple representative, use of manipulatives and requiring students to articulate their math experiences.

• Department-wide collaboration (such as faculty inquiry groups, exchanges and shared activity development) which enables the design of new ways to draw out student thinking, reasoning and sense making.

-- We have done this in a Winter retreat where faculty looked at student work on a common final question. Also, we had a retreat where we looked at student work from a classroom assessment.

• Explore and embrace research on theories of student learning with time and framework for discussion.